ERIC Document Resume	See Instruction Sheet	DATE OF RESUME 6/26/65	DATE RECEIVED

A. PUBLICATION DATA

1. ED NUMBER	2. ORIGINATOR CONTROL NO(S).	3. IDENTIFICATION NO.
ED001069	NA	NA

DO NOT WRITE IN SPACE BELOW

4. AUTHOR(S):
Cohen, S. Alan

5. TITLE OF DOCUMENT ABSTRACTED:
Reading: Large Issues, Specific Problems, and Possible Solutions

6. PUBLICATION TITLE:
N.A.

7. EDITOR(S):
N.A.

8. PLACE OF ORIGIN
ORG. Mobilization for Youth
ST. New York, New York
CITY, STATE

9. PUBLISHER OR SOURCE
Mobilization for Youth
New York City

10. VOL.	11. PAGES	12. MO./YR.	13. TOTAL PP.
N.A.	N.A.	N.A.	30

TELE. EXT.
INST/LOC CODE

MICROFILM COPY AVAILABLE
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TYPE OF REPORT
PROPOSAL ☐
IN-PROGRESS ☐
FINAL ☐
FOLLOW-UP ☐

OTHER ERIC REFERENCES:

ERIC SATELLITE CODE

B. INDEXING DATA

14. SUBJECT AREA

15. TYPE OF ENDEAVOR

16. INDEXING TERMS (6-12)

reading instruction	disadvantaged children		
student participation	educational methodology		
achievement levels	cultural deprivation		

17. ABSTRACT (MAX. 250 WORDS)

There is a serious inconsistency between what shcools say they want to do and what the schools are in fact doing. The methodology of the world of school is beginning to parallel heartless business and humanless technology. In an attempt to affect a means of education for young people who are being sucked into a depersonalizing society, the issue of the educator's role, problems of methodology, and guidelines for action are discussed.

The core function of educational administration and classroom teaching is to increase the quantity and quality of learning. Three specific problems face educators who attempt to carry out this prime responsibility. First, the problem of educating individuals within a system of universal schooling must be solved. This involves adjusting the levels of instruction to levels of capacities and adjusting speed of teaching to rate of learning. The second problem involves refining methodology to increase quality. This means that schools must not neglect the teaching of democracy, respect for individual rights, and a sense of social responsibility. The third problem is in having educational practices keep pace with educational research.

As a major guideline for increasing the quality and quantity of learning, this paper emphasizes the individualization of instruction. A model program for the teaching of reading is sketched and the teacher's role in relation to this program is redefined.

ERIC No.

18. SOURCE OF ABSTRACT

C. FUNDING DATA

19. SUPPORTING ORGANIZATION	20. DIVISION OR DEPT.	21. CONTRACT NO. / PROJECT NO.
	22. TOTAL COST OF PROJECT	
	23. DURATION OF PROJECT	U.S. Department of Health, Education, and Welfare Office of Education

at press R12

READING: LARGE ISSUES, SPECIFIC PROBLEMS, AND POSSIBLE SOLUTIONS

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INTRODUCTION:

The "expanding role of the school" is an old cliche antedating the current social issues that alarm us. John Dewey spent a lifetime propagating this theme. Horace Mann recognized it almost a century before Dewey. Jefferson warned us of education's crucial role in the new democracy as early as 1779. Professional educators have talked, written, and pleaded with social leaders to recognize the school's crucial role as agent of social control or change, but most of the pleas have tended to fall on deaf ears and hard hearts.

Suddenly, social crisis has brought federal and foundation money to the doors of urban schools. Automation, unemployment, segregation, delinquency, cultural conflict, overpopulation, and a general depersonalization of man have jolted the keepers of the research purse out of their lethargy. With the challenge of the crisis and the lure of research dollars have also come the social scientists. Ironically, they come to warn the educator about the school's expanding role and to convince him of his need for help from allied professions. Dazzled by this sudden flood of attention and unprepared in the know-how of research and development on a grandscale, the stunned educator alternates between overdefensiveness of his practices and overenthusiasm for new responsibilities as social change agent.

There has been little time to build efficient lines of communications between these "peripheral" professions and the school, but the social crisis refuses to wait for more time. So, with imperfect lines of communications, but with research money and good intentions, the social sciences have joined forces to turn the school into the potent force for social control and change that educators have long envinioned.

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I have an uncomfortable feeling that some educators forget their core function. They forget that the educator's job is, in Dr. Donald Durrell's words, "to increase the quantity and quality of learning." As a result, professional education in general, and teaching of reading in particular has suffered.

No other profession can claim as its core function the development and application of theories and techniques to increase the quantity and quality of learning. Whatever else I do, I cannot call myself a professional educator unless I am basically concerned with operations that increase learning efficiency. Furthermore, by neglecting my core function, I am not fulfilling my social obligation to youth and community.

Why have some professional educators rejected this unique obligation?

In his quest for methods to increase the quantity and quality of education, John Dewey urged educators to cross professional boundaries for knowledge and techniques to upgrade classroom instruction. Dewey also recognized the role of the school as a social force. (11) He emphasized the need for professional educators to recognize their potential as agents of social change. But at no time did Dewey lose sight of the core functions of education, for it is through these functions that educators play out their role as change agents for society.

Unfortunately, some of those who have come after him have not shared his perspecacity. Reconstructionism in American philosphy of education advocates, for example, that the principal job of the school is to initiate or promote social change. (9:319-324) Theodore Brameld, Reconstructionism's leading voice, defines the direction of change and advocates education for world government as the educator's primary concern. (8)

Thus, one reason why some educators have not fulfilled their unique function is because they have never accepted the upgrading of learning as their primary obligation. They have chose, instead, to reject their professional obligation or

to use the profession's name to gain public prestige for actions that each of us should perform as citizens or as social leaders. As citizens, social leaders, and professional educators we might agree with Brameld's desire to promote world government. We might act upon that desire. In doing so, however, we would be sharing a function with other social leaders, other professionals, and with other responsible citizens of any vocation or profession. We would not be fulfilling our unique service to the community as professional educators.

Let us consider an analogous situation. The peace of mind and personal counseling offered by my family physician adds to his professional competency. I admire his active support of social reform and his concern for education. But he is first and foremost a diagnostician who knows how to treat pathology. Were he not, all his other attributes would not compensate for his basic professional deficiency. I would seek another physician.

As educators we want to help resolve the social problems fo our day. We should act decisively one way or another on the church-state issue. Juvenile delinquency is a major concern of the school. But our first job as professional educators is to upgrade learning. This must receive our top priority. We should not commit ourselves to careers in professional education unless we are willing above all to dedicate ourselves to increasing the quantity and quality of learning. Whatever else we do may add to our professional competency, but it can never substitute for the function we are expected to perform.

In serving this function, we may discover that our greatest contribution to social change is through upgrading learning in the classroom. For example, can we say we know how to teach culturally deprived youngster to read, that we can do this efficiently and with certainty if we get enough money and specific types of materials and facilities? When we can say this with certainty, we will offer the community a greater service in remediating social iniquities than any Princeton plan can promise. On that day, we can shift the desegregation battleground from clever diversionary skirmishes in the schools to the proper no man's land of housing,

business, political demagogy, the employment squeeze, automation, and personal prejudice.

The least we can do is start now to solve the learning problems of disadvantaged children. We cannot do this with vigor until professional educators recognize their core function, which means less time and energy spent politicking with pressure groups, less time juggling school enrollments according to race and color, and more energy spent on educational technology. We must stand together as a profession in every community and bluntly announce to the public that we will not allow the school to continue as whipping post for every social disease or national crisis from Sputnick to juvenile delinquency, from low morals to high traffic death rates. If we do this, however, we must be prepared to plunge vigorously into our professional function of upgrading learning in our schools.

While the first reason for not fulfilling our unique professional function is a lack of acceptance of that function, the second reason is a logical result of it. We know how little we know about learning. In defense of our deficiencies we assume many functions thrust upon us by the family, by other professions, and by sectors of the community who see in us a convenient dumping ground for unwanted responsibilities. We become responsible for instilling a fear of God, for controlling the labor market, for teaching about sex, for reducing highway death rates, for preventing (or causing) juvenile delinquency, for solving (or contributing to) the social problems of disadvantaged children, for closing the missile gap between Russia and the West, for selling accident and health insurance, for preventing (or causing) mental illness. If we do all these jobs, perhaps no one will notice we have not made significant break throughs in increasing the quantity and quality of learning to read, write, and do arithmetic, of learning to solve perscnal problems, of learning history, science, and some other basic subjects most people will agree are within the unique domain of the school. Perhaps we assume these extra responsibilities to hide our inadequacies and to appease our sense of guilt for these deficiencies. Adding to our professional burdens hides those inadequacies

at the same time it punishes us for performing such subterfuge. If this is so, we suffer a serious professional neurosis.

What price do we pay in terms of upgrading learning to read?

First, our energies are diverted to all these peripheral responsibilities. Rather than concentrate on more professional know-how about methods and materials of learning, we spend our energies on the diversions. If we knew more about how to teach reading, and what to use to teach it better than we have in the past, I would be delighted to transfer some of this knowledge of technique to sex education. I would be the first to advocate assuming the responsibilities of all those pressure groups who cannot do their own jobs well enough. I would teach morals better than the clergyman and administer psychotherapy better than the psychiatrist. But first, I ought to perform my own basic responsibilities better than anyone else.

In 1964 I have some doubts about the ability of a large sector of my profession to meet its basic responsibility better than anyone else. A few months ago one of Mobilization for Youth's street workers, a skilled social worker, came to me for some advice about four delinquent eighth graders with whom he had been working. He had discovered they lacked the basic skills of reading and writing. In less than a month he had taught these youngsters to read simple fourth grade material. He had come to me for suggestions about material and techniques.

"Do you know," he exclaimed, "they didn't know the alphabet or the sounds of some letter combinations!" His bewildered tone was a condemnation of my profession. What had the school been doing for eight years? How could four boys sit in school day after day (less truancies), ten months per year, for eight years without having mastered the alphabet? What magic had a street worker performed incidental to his core function that the professional educators could not do?

Have the schools so burdened themselves with varied jobs, that they have neglected to perfect their basic responsibility which is to teach every youngster to read and write? In Puerto Rican New York or in Chicago's black belt the fact

that cultural conflict, language barriers, and a host of other intervening factors complicate the process is no excuse for failure to do our job. It is, in fact, added reason to cast aside peripheral task and plunge into the core functions of education--to upgrade the learning at least of reading and writing.

Teacher training institutions reflect a similar dilemma of biting off more than it can digest. In four years they must provide every prospective teacher with a liberal arts education. In addition, they must prepare him for all the responsibilities of the profession. He may get one course in learning (combined with statistics, tests and measurements, and general psychology) and one course in "language arts." How much time is left for colleges to teach the technology of teaching reading? Mary Austin's study is a shocking answer to this question. (3)

In the end, the superintendent of schools or the principal must hire a reading consultant to tell him and his reading teachers how to teach reading. If some of us try to hold him or his staff responsible for professional know-how, he begs off by arguing, "But I'm not a reading specialist!" or "I'm no psychologist!" One wonders just what he is--just what functions can we expect an administrator or teacher to perform that a member of no other profession can perform?

It is no wonder that these same teachers and administrators must battle the local right wing lay educators who insist they know the best methods of teaching reading. Some of these malcontents know but very little less than the professionals. For example, how many teachers or administrators can answer the following questions about learning to read? By answer, I mean know what the experimental data has indicated about learning to read.

> What basic reading subskills most affect reading achievement in grade one?
>
> In grade one, what is the relative order of difficulty of auditory discrimination of consonant sounds?
>
> In grade one, which is more effective, teaching words in isolation or in phrases?
>
> Do illustrations influence reading comprehension scores in primary grades?

What single variable is the best single predictor of reading success in grade one?

Does visual acuity or handedness affect reading achievement?

What classroom activities promote positive attitudes toward reading?

Do vocabulary glossaries aid reading achievement?

If educators know so little about learning to read, it must expect onslaughts from the likes of Mr. Trace, who knows a little about how Ivan learns to read, but less about how Johnny reads. (22) How exasperating for some of us to see a college English teacher parade as an informed professional on the subject of "The State of Reading Instruction Today." (23) In spite of his misinformation, he does know as much about reading as some professionals with whom I have worked.

What boredom and waste of energy passes off as a "linguistic" approach to reading! (7) As if there were ever anything else! Unfortunately, the present mode of linguistics is painfully narrow. It restricts itself primarily to "code busting," as if reading were nothing else but this. It is tragically self defeating in its restriction, and it not only ignores, but it repudiates some empirical data about reading that we know are valid. One linguistic school compounds its ignorance of reading research by resorting to "linguistic law," the origin of which seems to be whim and fancy.

Some educators' lack of professional know-how has offered pseudo experts these fertile grounds on which to proliferate. How many professional educators know more about the teaching of reading than Professors Trace or Walcutt? More important, how much of the educator's time is spent finding out more about the teaching and learning of reading?

SUMMARY OF PART I

Some educators have not defined their unique professional role. Others have defined it, but have refused to assume that role. For various reasons ranging from avoidance to incompetency, educators involve themselves in peripheral issues.

Such issues are certainly within the professional educator's domain, but they are not central to his profession. The core function of educational administration and classroom teaching is to increase the quantity and quality of learning. Until he gives this function his top priority, the educator will be plagued on one hand by added social responsibilities that are more appropriately obligations of other sectors of the society, and on the other hand, by pseudo-educators who insist they know more about educational technology than the professionals.

The greatest service a professional educator can offer to his community is the ability to teach its children to read, write, do arithmetic, learn a trade, and learn a variety of skills and attitudes that social leaders and students feel are important to have. Before he says, "I can help desegregate the community," or "I can reduce the juvenile crime rate in this city," the professional educator must first say, "I can teach reading (for example) with certainty." For this is the domain through which we educators can, in fact, help solve some of the social problems of our day.

PART II: SPECIFIC PROBLEMS

The latest word about Mark Hopkins on one end of a log is that he was no educational bargain. (10) Nevertheless, the principle of that aphorism remains valid if we replace President Hopkins with Mr. Chips or Sylvia Ashton-Warner or any half competent pedagogue. Why is a one-to-one teacher-student ratio so potentially effective?

First, the time and energy devoted to learning can be adapted to the individual. The learning program need not fit the mode, median, or mean of any group, heterogeneous or homogeneous. What the pupil already knows is respected, so that learning can involve new skills, content, attitudes, and perceptions. Thus, the content of learning fits the individual's needs.

Secondly, the level of content can be tailored to the single student's level of capacity and achievement. A personal tutor can translate information about ninth

grade algebra into fourth grade vocabulary for the "low verbal, high math" pupil.

Thirdly, the speed of teaching can be adjusted to the pupil's learning pace. He need not waste one day on three pages of word drills waiting for fifteen classmates to master the concept of comparative degree in English modifiers. Nor must he plunge into the superlative degree of adjectives if he has not yet grasped the positive degree. He moves at his own pace.

Finally, the frequency of response to teaching stimuli is intensified in the one-to-one relationship. The tutored student is always on the spot. He always works, always acts, and never has to wait his turn. He is always next. This is active learning par excellence.

Certainly, much is to be gained in a group. There are potentials for social-personal experiences, enrichment, motivation, variety, and sheer fun that the one-to-one teacher-learner system cannot provide. But there are some crucial variables not easily supplied in the group that have long been the selling points of tutorial education. One-to-one teaching-learning is highly efficient because it can provide for individual content needs, levels, speed, and frequencies of learning.

The first specific problem in increasing the quantity and quality of learning in mass education is the difficulty of providing for individualized needs of content, level, speed, and frequency of action.

Homogeneous grouping is no solution. Research shows generally no significant differences in school achievement due to homogeneous grouping. (12) The reason may be that grouping per se does not individualize level, speed, or frequency of action. Nor does it provide for specific content needs of individuals. Nor does it automatically increase motivation. I suspect that the academic successes of a Boston Latin School or Bronx High School of Science alumnus are due less to his superior education and more to his superior capacity. Abramson's study on this population supports my hunch. (1) I am less impressed with Andover and Exeter academies than I am with their students. These are the same types of students whose scholarship impressed me my first year teaching in an understaffed, poorly financed,

third-rate rural high school. They learned in spite of the quality of education. For the rest of the population, however, grouping by itself offers us no solution to increasing the quantity and quality of learning unless individualized content, level, speed, and frequency of active learning are achieved. With a thirty-to-one student-teacher ratio, something in addition to grouping is needed to up-grade learning.

For example, it is still common practice to group students according to intelligence. Yet, any competent psychologist can advise the educator that two 110 IQ's on a Wechsler Intelligence Scale for Children are alike only be accident of arithmetic. One score probably represents an entirely different subtest scatter than the other. One's liabilities may be the other's assets. Two youngsters represented by these numbers are as qualitatively different as any two people can be.

The same is true of reading achievement scores. Our research shows that in a group of students testing at fifth grade level in reading, the spread of scores for any specific reading subskill is normally distributed. (4) Furthermore, the spread of most reading subskill scores for the top quartile of readers is not very different from the bottom quartile of readers. (5) This means, for example, that on the Iowa Silent Reading Test, five tenth graders can earn a total reading grade level of 11.0 <u>for five different reasons</u>. Johnnie may be a whiz at locating information; Tom may be strong in vocabulary and sentence meaning; Bill may excel on speed of comprehension, and so on. Tom may be below average on the specific subskill on which Bill excels, yet both earn reading grade levels of 11.0. Do both have the same reading needs? Can such needs be solved by grouping according to reading grade level?

How many schools group students "homogeneously" according to reading grade levels and then assume that they all read approximately the same? Phil reads at grade level 9.5; his paragraph comprehension is two grade levels above Tom's score. Yet, Tom's reading grade level is 11.0. The need to adjust instruction to individual needs in content, level, speed, and frequency of activity is just as

great in so called "homogeneous" groups as in so-called "heterogeneous" groups. To improve the quantity and quality of instruction in reading, the nature of the general grouping of a class into "high" readers or "lo" readers, Spanish speaking Puerto Ricans, or English speaking Puerto Ricans, Mississippi or Detroit Negroes does not solve the problem of individualizing instruction.

The second specific problem in upgrading learning is to affect "quality of learning," and consists first of defining operationally what is "quality." If Phil increases his reading achievement by two grade levels in one year of school, have we increased quality or quantity? Have we affected understanding, appreciation, or creativity? Can Phil think critically, can he feel in depth, can he think elaboratively? What affect has learning had on Phil's psycho-social behavior? Have basic perceptions of himself and the world around him changed?

Teachers have talked of these qualities for decades, but we still do not have reliable or valid measurements of them. How can we know we increase quality if we cannot objectively measure it?

We are just beginning to scratch the surface of this problem. Under the labels of research in creativity, problem solving, and cognitive styles some break throughs seem imminent. Again, I cannot help wondering how many public school administrators set aside hours per week with their professional staffs to tackle this problem of quality of learning. Let them try to define it operationally, try to observe it, and then try to teach for it. Is this unreasonable to expect of professional educators?

There are some obvious places to begin this search for quality. For example, what does our reading research imply when it shows a significant difference in achievement of the same student who responds to test stimuli by selecting multiple choice answers versus response by written recall? Does this reflect a qualitative difference in behavior? Research shows that college graduates with adequate reading achievement scores read only one book per year on the average. Is this a problem of educational quality?

This year, in particular, I have grave doubts about the quality of instruction in the "larger" goals of the curriculum. In a nation tottering on the brink of social crisis involving automation, growing unemployment, the plight of young adults, and especially Puerto Rican, Negro, white migrant workers, and former coal miners, it is incredible to me that the "educated" citizenry of a city can overwhelmingly oppose social reform for culturally deprived people. One wonders just how potent education for citizenry is, for example, in the Boston schools. As in most large cities, Boston educators have allowed the civil rights battle to be fought in the schools. Unfortunate as this is, the facts still remain that in the last Boston school committee election, the "silk stocking" precincts joined the rest of the citizenry in trouncing the reform candidates. They handed a group of anti-desegregation candidates the largest plurality in the history of Boston school committee elections. The facts are that less money is being spent to educate Negro children than white children in Boston schools, the facilities in Negro schools are shockingly inadequate, and de facto segregation does exist, even though it is not the school's fault.

Most of the "silk stocking" voters are, at least, high school graduates. They are products of our schools. Am I to assume that all the business about more social studies, education for democracy, Christian ideals in the schools is so much hog wash? Has education failed to increase quality of learning of these values? Do the products of American schools emerge with a sense of social responsibility? Can we say that we have increased the quantity and quality of learning social studies when the election polls feed back such startling information?

Unlike my theme in Part I of this paper, the emphasis here is on effectiveness of instruction regardless of content. Obviously, the church and the home have not taught these values adequately. History bears testimony to this inadequacy. If the modern school assumes major responsibility for teaching these attitudes (and I am not sure it should), then it had better seriously consider the technology of increasing the quality of learning. Otherwise, it should hand back to other sectors

of the community the major responsibility for teaching the "larger" values.

Personally, I have enough trouble teaching reading, the larger part of which involves attitudes. Realizing the problems of increasing quality of learning in this specific area, I cannot be optimistic about education's probability of success in teaching the "larger values," at least, not at this stage of learning technology.

A third specific problem in education, and especially in reading, involves the wide gulf existing between the results of educational research and classroom practices. The lack of knowledge about educational research is bad enough in some administrators as well as teachers. More shocking, however, is the attitude of some educational practitioners toward research:

1. Research is theoretical and not practical.
2. Let college people worry about research; teachers have to teach and administrators are too busy administering.
3. Subjective experience of the "I-had-a-kid-once" variety is more valid than empirical data drawn from carefully controlled experiments.
4. Researchers know nothing about the classroom.
5. We've been doing it this way for years and it has always worked.

Not long ago I convinced a master reading teacher to match her talents against a teaching machine in a controlled experiment. Her department head tried to prevent the experiment by arguing: "I don't believe in teaching machines." That a teaching machine is neither a philosophy nor a religion to be believed or disbelieved, but a fact of life endowed with existential reality and equipped with data to prove its effectiveness, could not sway her. Fortunately, the principal could, and the experiment took place. The machine taught Latin and Greek affixes and structural analysis of words more efficiently than the master teacher. Both the students and the teacher were delighted with the machine, but the department head remained adamant: "I still don't believe in teaching machines." The principal shrugged his shoulders in despair and murmured something about

"retirement in two years, so why fight it?"

The irony of this anti-research attitude toward colleagues within the profession is the willingness of some educators to accept the word of less well-informed "specialists" peripheral to the profession. Publishers, for example, often find easy access to the classroom for their materials and techniques regardless of research findings. One famous publisher of reading materials sells a spelling package that does not teach spelling. He knows it because the research tells him so. If this publisher would sell this same package as a vocabulary kit, he would be, at least, intellectually honest. But a spelling package is a better seller, the material had already been labelled SPELLING before the research was done, and many educators do not ask embarrassing questions. Why bother with honesty?

The research problem starts right at the beginning of reading instruction. For example, basal reading system insist that a 50, 75, or 100-word sight vocabulary is necessary before we teach word attach skills to beginning readers. There is no substantial evidence for this. Some basal systems teach sight vocabulary before letter knowledge. Why? The research data that I have seen indicates that letter names must be taught long before a child masters 75 words. (20)

Reading readiness training is an excellent example of the poor use of research. How much time does a school spend on reading readiness exercises consisting of language development through pictures, non word forms, non word sounds? At best, these skills correlate about .45 with reading success. Usually the studies show .05 to .30 correlations. (2; 6; 13; 21) On the other hand, research suggests that letter knowledge, training in auditory discrimination of sounds in words, and visual perception of words correlate approximately .55 to .65 with reading achievement. (17; 18) Yet, many schools continue to spend disproportionate amounts of time on traditional reading readiness exercises in spite of the research.

There has been much noise lately in and out of the profession about the content of basal readers. Most of the discontent has no basis in empirical data. Are high interest low vocabulary books better teachers of reading then basal readers?

Generally speaking, no, according to Anna Harris' research. (14) One textbook publisher has invested large sums to color the skin of his basal reader characters. Some professionals (and I am not sure which profession was consulted) feel that basal readers are culturally distant from our city dwelling, disadvantaged children. I know of no convincing data which shows that shading the skin of characters in book illustrations will make a difference in self concept or in reading achievement. It may be worth trying if we also change the story line and the setting, but I would not advise a publisher to spend hundreds of thousands of dollars in production before I had collected some convincing data.

The problem is not only a neglect of existing research by many practicing professionals, but also a refusal to ask questions about their own practices. In other words, the educational practitioner must not only apply some of the "truths" of research, but he should, himself, implement research. He should not use a technique unless he has some evidence that a particular practice works. Furthermore, he must discover if his technique works better than other existing techniques. This is a tall order which is, at best, only partially filled, but it is a guide line to administrative decisions on quantity and quality of learning.

SUMMARY OF PART II

Three specific problems face educators who attempt to increase the quantity and quality of learning. First, we must solve the problem of educating individuals in a system of universal schooling. Somehow, we must match <u>content</u> to various individual needs. We must adjust <u>levels</u> of instruction to individual capacities and achievements. We must adjust speed of teaching to rate of learning for each individual. Finally, we must insure that every individual is <u>actively participating</u> in a learning experience and not waiting to participate. We must do this without relying on a traditional tutorial system.

The second specific problem involves "quality." We have not sufficiently defined "quality of learning." As a result, we have not refined methodology to

increase quality. Feed back from the raw realities of every day life, in every area of social stress, tells us that the Christian ethic, democracy, respect for individual rights, and a sense of social responsibility--stated goals of the American school--have not been adequately taught.

The third problem in upgrading learning involves research. Educational practices have not kept pace with educational research. Furthermore, many educators lack a "research attitude" and allow some well entrenched assumptions about teaching and learning to exist without adequate evidence of their validity.

PART III: SOME SOLUTIONS

The first job of the educator is to increase the quantity and quality of learning in the schools. If he is to affect youth and community, he will do it best through this unique professional function. He will improve the technology of teaching by building a methodology based on research. Such a methodology will be geared to individualizing content, level, speed, and frequency of involvement in active learning. What guidlines will he use to build his technology?

Goodwin Watson publishes a pamphlet in which he lists 50 psychological propositions that "we can trust." (24) They have withstood competition on science's open market of experimentation. Hilgard gives a condensed list of learning propositions that most theorists will support. (15:486) Both lists are convenient guides to building sound methodologies for the classroom.

As an example of sound methodology, let us consider a reading program built according to those learning principles we can trust. Then let us examine the psycho-social implications of such a methodology.

A Sketch of a Model Reading Program

Reading is one skill we expect of every normal child who enters school. An ideal reading program includes systematic instruction in every subskill of

reading arranged in a hierarchy of complexity. The core of this program would include a "least common denominator" of skills for every student.

On the basis of a detailed diagnosis, each student begins the core program at his approprate "need level." He proceeds at his own pace. Supplementary to the program are branches for remediation, extra instruction, and enrichment. The modes of instruction are as varied as there are materials and techniques in the educator's repertoire. Part of the core and the branching programs is the teacher. His job is to be one mode of teaching as well as the overall supervisor who matches materials and techniques to individual needs.

For example, at Mobilization For Youth, we are working on oral-aural-visual-writing techniques for teaching reading to illiterate and semi-illiterate school dropouts. We hope, eventually, to modify this for every grade level. We are considering a core developmental program built around a ten-station language lab, films, and programed books. Supplementary to the core program will be other programs, and as much materials that presently exist in the field of reading that we can collect, collate, and adapt to self-directing, self-correcting learning materials. All the materials will be adapted for use by individuals or by learning teams of ten, five, three, and two. Weaving together this complex of materials and students will be the teacher. His job will be to:

1. Arrange superior conditions for learning by building the "therapeutic classroom atmosphere" in which students risk behavior change.
2. Teach students how to teach themselves.
3. Insure success by carefully matching needs and materials.
4. Diagnose, guide, interpret, and evaluate growth. This is done in conjunction with the student, as service to him, <u>not</u> as a judgement.
5. Supply on-the-spot first aid when materials do not work or are unavailable.

6. Develop new materials to solve the problem in the future.

7. Personally interact with individuals and small groups.

8. Group and continuously regroup small learning teams.

9. Introduce as many enrichment experiences as the creativity of the individual teacher allows.

A sound methodology is based on precision of definition, perception, and action. In this model program the educator must think operationally. The term "reading" includes so many operations that it loses its meaning when we try to construct a methodology. When we say that Johnnie cannot discriminate the bl blend from other sounds at the beginning of words when they are presented to him aurally, we have reached a useful level of specificity. Now we know exactly what operation Johnnie must learn.

In reading, the number of these necessary operations that we must isolate is huge. Fortunately, students pick up most of these operations incidentally without direct training. But every student, regardless of capacity and achievement, will have a unique pattern of poorly developed operations that we must remediate as part of the regular developmental program. That is one reason why we must individualize.

This presents the educator with a formidable task. He must isolate specific operations which make up a learning goal, and he must develop materials and techniques that allow the individual to learn these operations with a minimum of teacher direction. With the help of research, educators can anticipate many of the operations for which we will need to program. Meanwhile, in the classroom, we will continuously discover or refine more and more specific operations for which we will develop new materials. This will be one of the educator's major tasks. Development of materials and techniques is the responsibility of the classroom teacher working in conjunction with supervisors and administrators in regularly scheduled, on-going, in-service staff conferences.

Let us look at an example of a specific skill. Johnnie has worked through

the beginning of a program in primary reading. He has learned the alphabet. He can perform a number of auditory and visual perceptual operations that we know are necessary for beginning reading. He is beginning to build a sight vocabulary and some basic phonic skills. One day, Johnnie discovers that he cannot write from dictation: "Pat put the bag on the bed." The teacher notices that he continues to have trouble with short medial vowels. A two-minute spot test confirms the teacher's suspicion: Johnnie has trouble discriminating medial short vowel sounds.

The teacher moves Johnnie to a machine on which we have programed a combination tape-card series on auditory and visual discrimination of medial short vowel sounds. Three other classmates need the same training and work with Johnnie in one corner of the room using headsets to reduce noise and increase concentration. They stay on the machine two hours per day at half-hour intervals. In two days, two members of the group leave because they have mastered the skill. They move on to another operation. Johnnie and his partner continue on a set of three-inch reel tapes with programed answer booklets for the same skill. These are supplemented by exercises from standard workbooks that have been cut up and filed according to the specific operations taught in each exercise.

In other parts of the room, students are working on other skills. One group of three are reading books they have selected from the classroom library. They could read well when they entered the program. These students will write short descriptions of their stories, or they will read stories to other students who are not yet at the reading stage. Four other students are preparing special projects in areas of individual interests. Ten students are proceeding on the language laboratory through the core developmental reading program. Each student works at an individual level and rate on content matched to his needs and/or interests. Everyone is actively learning. No one is waiting for others to catch up. No one is waiting for his next turn. Intensity of learning is high.

How does this methodology match valid laws of learning? (15:486)

1. Capacity affects who should learn what when. In a private school we might prescribe a course of study and then seek out individuals whose abilities and needs fit the prescription. In this case, the what and when are given, and we adjust the who. But in mass public education, the who is given. Our job is to adjust when and what to meet the capacities and needs of the individuals.

Everyone cannot always learn the same things. Even when they can, they may not be able to learn at the same rate. This is true of rats, chimps, middle class white children, and students in any country. A rigid, lock step, developmental program in any content area violates this principle. Whatever, we decide to teach, the teaching program must be adjustable to individual time tables.

2. "A motivated learner acquires what he learns more readily than one who is not motivated." (15: op. city.) In the previous model, motivation is handled according to valid learning principles:

a. Motivation that is too intense (as in pain, fear, or extreme anxiety) may introduce to learning distracting emotional states. Every youngster has strengths or weaknesses. In the model program every youngster recognizes every other classmate's strengths and weaknesses because the methodology is built upon these factors. Johnnie recognizes that he shares a specific weakness with three classmates. He also recognizes that two other classmates working on another skill, in another part of the room, do not have the same weakness. Their problem is different, but they have a problem. Pupils are alternately operating according to their strengths and weaknesses. Individual differences are obvious not only to the teacher, but more importantly, to the pupils.

In this system the basis of motivation is need and strength.

These are openly apparent to every student. This is a therapeutic atmosphere because each student is expected to bare his weakness and remediate it. Instead of punishing Johnnie for his weaknesses, the school rewards Johnnie for helping discover his own weakness and for remediating that weakness. Ego defense is unnecessary.

Finally, the system provides a floating teacher who can boost the ego of the threatened child and control the level of motivation.

b. Learning under intrinsic motivation is preferable to learning under extrinsic motivation. The entire program is built on achievement success rewards. Not grades or candy, but successful achievement of a skill is the basic motivation. Research indicates that achievement success feeds on itself and drives the subject to further achievement. Every normal youngster wants to succeed.

c. Success or positive reward is preferable to negative reward, failure, or punishment. Research shows that target behaviors in the lab tend to be learned equally as well with positive or negative reinforcers. However, most learning specialists agree that side effects or "social by--products" (non target behaviors) are more favorable when learning is reinforced positively.

In the model program failure or lack of success is a temporary state. The goal is success; the methodology offers each individual the chance to succeed.

d. "Tolerance for failure is best taught through providing a backlog of success that compensates for experienced

failure." By focusing on strengths and weaknesses and on specific operations, the teacher can match materials to strengths to insure success, and then to weaknesses to insure growth. If learning goals are defined operationally in very specific subskills, the individuals can move step by step through a complex pattern with high incidence of success. This is the most valuable feature of programed instruction. Success is built in so strongly, that it compensates for occasional failure. When it does not, the model program provides a floating teacher who can rush to the aid of the individual, because all of his time is not monopolized by the whole class.

3. "Individuals need practice in setting goals for themselves, goals neither so low as to elicit little effort nor so high as to foreordain to failure. Realistic goal-setting leads to more satisfactory improvement than unrealistic goal-setting." (ibid.) In the model program, instruction is largely self-directing. The individual student is constantly making decisions. He constantly checks and paces himself. His teacher is a consultant who offers suggestions for goals and for means. But it is the individual who discovers for himself that he cannot write "Pat put the bag on the bed." And it is the individual who seeks help with medial short vowels.

4. "Active participation by a learner is preferable to passive reception." (ibid.) The model program's primary feature is high intensity learning. Frequency of response is high because instruction is individualized. The program incorporates this feature of a tutorial system while preserving the advantages of a group experience by using self-teaching materials that can be used either individually or in learning teams. The student does the teaching in conjunction with materials, classmates, and a supervising teacher.

5. Meaningful tasks are learned more efficiently than tasks not understood by the learner. In the model program this learning principle partially is fulfilled through a sixth principle.

6. "Information about the nature of a good performance, knowledge of his own mistakes, and knowledge of successful results aid learning. (ibid.) Many educators insist that all materials should relate directly to the student's needs or interests. So, for example, they argue that basal reader content is relatively meaningless to culturally deprived youngsters who cannot relate to the middle class content. This is an excellent guiding principle: The materials and tasks of the model program should conform to the student's needs or interests.

However, there are other types of meaning. This is implied in our research which indicates, for example, that basal readers are as effective as "high interest" literature in teaching reading. Knowledge of one's strengths and weaknesses, knowledge of the nature and reason for a task, knowledge of goals, knowledge of results of drill exercises, and the chance to succeed give these tasks and materials tremendous meaning for individuals who want to succeed.

A good learning program uses both types of meaning to promote learning.

7. "The personal history of the individual, for example, his reaction to authority, may hamper or enhance his ability to learn from a given teacher." (ibid.) I hope the day will come when teachers and administrators are psychologically secure enough to recognize individual differences of temperment and perception and are willing to transfer youngsters in order to best match teacher-student personalities. Meanwhile, a teaching program that allows both maximum and minimum contact between teacher and student will help us adjust to this problem. Under the model program, a youngster who cannot relate to his teacher (or vice versa) can benefit from self-teaching programs and from close personal interaction with his classmates in learning teams.

What are the psycho-social implications of such a methodology?

The model program tries to add the advantages of tutorial instruction to the techniques of mass education. It does not replace large group teaching entirely. Whatever values exist in a teacher talking to or at thirty people at once can still be retained. But in implementing a metodology based on individual self instruction or small team learning we make some important decisions about the type of persons we graduate from our schools.

Social respcnsibility: If four youngsters sit in a tight cluster with headsets plugged into one Bell and Howell Language Master, they are forced to operate in close harmony to achieve their goals. The programs in phonics that we are building into these machines require complex processes which depend upon cooperative effort. Team learning techniques to teach skills and content thrust youngsters into situations in which they must depend upon each other. Our preliminary research with machines and team learning shows that when youngsters choose to work on a skill, they quickly master the technology of the machine and recognize the necessity of interdependence. Excellent research in team learning at Boston University shows higher achievement on many tasks and in content units that are self taught in teams of two, three, five, or ten compared to achievement when taught in groups of thirty or individually. (25)

To teach social respcnsibility, I prefer the real to the vicarious learning experience. In team learning, social responsibility is necessary to reach individual goals. It is taught incidentally, and incidental learning is a subtle and potent technique, because it is not artificial.

Personal responsibility: A self-directing, self-correcting learning experience, requires the individual to make decisions. He must teach himself. This is not a structureless situation. Like most areas of our daily lives, this is a highly structured environment. But within the structure is the provision for adequate amounts of self-direction.

Positive self-direction and decision-making are two characteristics of maturity. Producing mature individuals is one of the school's goals. Yet, under present methodology, education contributes to the "social prolongation of infancy" by spoon feedings, tight schedules, restrictions, dormitory curfews, etc. (16:67) From K through graduate and professional school students are told what, when, how much, and by what means to read. I have never accustomed myself to the look of panic on the faces of my college students right up to the doctoral level when I refuse to assign a required textbook for a course. Instead, I usually present an annotated reading list and guide to reading. My instructions are to read as many or as few books and articles they feel they can in the light of their own needs, available time, and interests. In a few weeks, the panic usually turns to open hostility in what is obviously a pure case of projection. Most of these students have never had an option on their own education, and by the time they have spent more than fifteen years in American schools, the desire to be master of their own reading destiny has been extinguished. The frightening issue here is how much of their total existence follows the same pattern

Social-personal development: In a program geared to individual needs, the youngster perceives himself as successful. Each step fits his level and rate. Probability of success is increased. Furthermore, he recognizes around him the variability of strengths and weaknesses. In the model classroom, individuality is an existent reality, not a glittering generality.

The student experiences his own worth. Materials and methods are matched to him, not he to them. With everyone working at his own pace on his own needs, he can devote time to some of his special interests—to what we call "pupil specialties." They become part of the classroom routine. Suddenly, his interests are important to the school which is the power culture's agent. It is as if the culture were saying to the individual, "We recognize and respect you uniqueness."

Rewards and satisfactions: The focus of the model program is on intrinsic rewards. Today, schools talk abundantly to their students about the evils of

materialism and the mighty greenback. But these same schools hold extrinsic rewards over their students' heads as enticements to achieve: grades, honors, prizes, special priviledges, etc. In the model program success in achievement is its own reward. The program offers the school the distinction of being the only social institution to revitalize a noble ideal. The possible social consequences would be certainly worth the educational effort to decrease extrinsic reinforcement and promote intrinsic reward.

General hostility and negative behaviors: If theories of individual and social behaviors are valid, negatively reinforced behaviors affect the total personality in areas beyond the specific behavior being learned. The "social by-products" of constant negative reinforcement are hostility and, in general, negative behaviors throughout the entire personality. The model program uses positive reinforcement and avoids these "social by-product."

Frustration tolerance: When the school provides an atmosphere in which a youngster can succeed, it is helping to build in to the personality a backlog of success that will compensate for occasional failures. In culturally deprived areas, the public school could become, if it developed the methodological style of the model program, the only major social force dedicated to the building of success reserves in a population that usually experiences failure, rejection, and disapproval. The juvenile delinquency that concerns us in disadvantaged areas is the end result of this frustration.

Control of destiny: One of the salient characteristics of culturally deprived youngsters (and oldsters) is the attitude of futility. This characteristic cuts across social class, for it cleverly hides behind split-level facades in suburbia. To Puerto Ricans on East Second Street or to Negroes on 125th Street, there is no tomorrow because they are helpless victims of contemporary conditions. In a self-directing learning process, the individual can become partial master of his educational destiny. The school has an obligation to give every individual the chance to taste this mastery.

SUMMARY OF PART III

To increase the quality and quantity of learning, we must individualize instruction. The school must offer a program of self-directed learning based on reliable principles of learning.

In Part III, I have briefly sketched a model program for the teaching of reading and have redefined the teacher's role in relation to this program. I have selected some of the reliable laws of learning that can be applied to classroom methodology.

Finally, I have presented some psycho-social implications of this methodology. Frankly, I suspect that in the school, methodology more than content is the key to affecting social change. This is the basis of my contention that when the educator assumes his core function, he will make his greatest contribution to his community.

CONCLUSIONS:

We talk about educational technology with loftiest intensions, but the cash value of intentions is action. Have educator's actions been compatible with their intentions? Let us look at our methodology.

We say we believe in individuality as we focus thirty pairs of eyes on page 167 of the eighth grade English reader, the same reader used next door, and across town. We say we believe that the school is an institution that promotes individual self actualization. Yet, the best we strive for is equal expenditure of public funds for every child. The fact that some children need more facilities, more services, more opportunities to learn in order to self actualize is irrelevant in practice. There seems to me a serious inconsistency between what the schools say we want to do and what the schools are in fact doing.

That is why in this paper I have tried to restate and simplify: 1) the unique roles of professional educators: 2) some specific problems we must solve to fulfill

that role; 3) some guide lines for action and a methodological model. The lofty goals of educators that I memorized in graduate school and that I have read in the stated philosophies of specific school systems in which I have taught have not been achieved in fact, because methodology has been inconsistent with this unique role. I have tried to illustrate my case in terms of reading instruction not only because it is my current specialty, but also because it is so basic to formal schooling. My concern, however, goes beyond the reading classroom.

I have seen the sullen masks of the unemployed in the cities. That same expression clouded the faces of semi-literate adolescents who attended our reading clinic at a state reform school for delinquent boys. That same look of futility and helplessness is the badge of an alienated population on New York's Lower East Side. You can see that same expression on the faces of school dropouts in the black belts of our great cities. Those of you who enjoy the shallow comforts of suburbia, look closely at your "priviledged" adolescents--your catchers in the rye--who are often the only realists in your schools. They, too, feel the despair and absurdity of an alienated existence. They know that the world of school has a double standard, one represented by its words and one reflected in its methodology. The methodology parallels the world of heartless business, humanless technology, and passionless marriage.

I have worked closely with all these youngsters from every economic level, and I am struck by the universality of that empty feeling which drains them of élan. This feeling seems to me a result of a punch card world, a world that casually measures its next war's victims in the billions, a world of things and machines that not only threatens the flesh, but the spirit as well. I think our social problems spring from this dehumanization of man.

This has been my hidden agenda. The issue of the educator's role, the problems of methodology, and the guidelines for action are my attempts to affect a means of educating young people who are being sucked into a depersonalizing society.

I hope that the school will reverse itself, pull itself away from social trends that dehumanize us, and assume its basic obligation to improve the quality and quantity of learning. To do so, educators will have to move in the methodological direction suggested in this paper. When they do, the school will become a great social force for the preservation of individual man.

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